Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (canceled)

2. (canceled)

3. (canceled)

4. (canceled)

5. (canceled)

6. (canceled)

7. (canceled)

8. (canceled)

9. (canceled)

10. (canceled)

11. (canceled)

12. (canceled)

13. (canceled)

14. (previously presented) A method for extracting nucleic acid from a sample, the sample containing cells or viruses, the method comprising the steps of:

    a) introducing the sample into a cartridge having:

i) a lysing chamber for lysing the cells or viruses to release the nucleic acid therefrom, wherein the lysing chamber contains at least one filter having a pore size sufficient to capture the cells or viruses in the sample as the sample flows through the lysing chamber, and wherein the lysing chamber further contains beads for rupturing the cells or viruses;

b) a waste chamber for receiving used sample fluid that has flowed through the lysing chamber; and

c) at least a third chamber for receiving the nucleic released from the cells or viruses;

b) forcing the sample to flow through the lysing chamber to capture the cells or viruses with the filter;

c) forcing the used sample fluid that has flowed through the lysing chamber to flow into the waste chamber;

d) placing a lysis buffer in the lysing chamber;

e) agitating the beads to lyse the cells or viruses, wherein the beads are agitated by sonicating the lysing chamber using an ultrasonic transducer coupled to a wall of the lysing chamber; and

f) forcing the nucleic acid released from the cells or viruses to flow into the third chamber.

15. (previously presented) The method of claim 14, further comprising the step of mixing the nucleic acid with reagents in the third chamber.

16. (previously presented) The method of claim 15, wherein the cartridge further includes a reaction chamber, and the method further comprises the steps of forcing the nucleic acid and reagents to flow into the reaction chamber and amplifying the nucleic acid in the reaction chamber.

17. (previously presented) The method of claim 16, further comprising the step of detecting the amplified nucleic acid in the reaction chamber.

18. (previously presented) The method of claim 14, wherein the third chamber is a reaction chamber and the method further comprises the step of amplifying the nucleic acid in the reaction chamber.

19. (previously presented) The method of claim 18, further comprising the step of detecting the amplified nucleic acid in the reaction chamber.

20. (previously presented) The method of claim 14, wherein the ratio of the volume of sample forced to flow through the lysing chamber to the volume capacity of the lysing chamber is at least 2:1, and wherein the volume of sample forced to flow through the lysing chamber is at least 100 microliters.

21. (previously presented) The method of claim 14, wherein the ratio of the volume of sample forced to flow through the lysing chamber to the volume capacity of the lysing chamber is at least 5:1.

22. (previously presented) The method of claim 14, wherein the volume of sample forced to flow through the lysing chamber is at least 1 ml.

23. (previously presented) The method of claim 14, wherein the beads have a binding affinity for the cells or viruses to be disrupted, and wherein the method further comprises the step of binding the cells or viruses to the beads.

24. (currently amended) The method of claim 14, wherein the beads have a binding affinity for the [[analyte]] nucleic acid, and wherein the method further comprises the step of binding the [[analyte]] nucleic acid to the beads.

25. (previously presented) The method of claim 14, wherein the lysing chamber contains a first set of beads for binding the cells or viruses and a second set of beads for rupturing the cells or viruses, the method further comprises the step of binding the cells or viruses to the first set of beads, and the step of disrupting the cells or viruses comprises rupturing the cells or viruses with the second set of beads.

26. (previously presented) The method of claim 14, further comprising the step of sonicating the lysing chamber while forcing the sample to flow through the lysing chamber.

27. (previously presented) The method of claim 14, further comprising the step of forcing a wash fluid to flow through the lysing chamber after forcing the sample to flow through the lysing chamber and prior to placing the lysis buffer in the lysing chamber.

28. (previously presented) The method of claim 14, wherein the lysis buffer comprises a lysing reagent.

29. (previously presented) The method of claim 14, wherein the cartridge has a first filter for filtering coarse material from the sample and a second filter in the lysing chamber for separating the cells or viruses from the sample, the second filter having a smaller average pore size than the first filter, and wherein the method further comprises the step of forcing the sample to flow through the first filter, thereby filtering the coarse material from the sample, prior to forcing the sample to flow through the second filter.